

State of California — The Resources Agency  
DEPARTMENT OF PARKS AND RECREATION  
**PRIMARY RECORD**

Primary # \_\_\_\_\_  
HRI # \_\_\_\_\_  
Trinomial \_\_\_\_\_  
NRHP Status Code \_\_\_\_\_

Other Listings \_\_\_\_\_  
Review Code \_\_\_\_\_ Reviewer \_\_\_\_\_ Date \_\_\_\_\_

Page 1 of 3 Resource name(s) or number (assigned by recorder) N-206

**P1. Other Identifier:** 12' Pressure Wind tunnel, N.A.C.A. 12' Research Tunnel

**\*P2. Location:** ☒ Not for Publication ☐ Unrestricted

**\*a. County** Santa Clara

**\*b. USGS 7.5' Quad** San Francisco North, Calif. **Date:** 1995

**\*c. Address** 355 King Road

**City** Moffett Field

**Zip** 94035

**\*e. Other Locational Data:**

**\*P3a. Description:** (Describe resource and its major elements. Include design, materials, condition, alterations, size, setting, and boundaries.)

Building N-206 is the 12-ft Pressurized Wind Tunnel, re-construction completed in 1995 of the original 1946 wind tunnel. It is located on King Street, just east of Building N-206A. Building N-206 can be broken down into three distinct parts. The front of the building faces King Street and serves as the main entrance to the building. It has a concrete foundation, flat roof and minimal architectural detail. The first story is made of seven bays separated by concrete piers. In between the bays are rectangular, synthetic panels that span the length of the bays. The center bay serves as the main entry to the building with aluminum glazed doors and a massive, simple canopy marking the entrance. The second story steps slightly in front of the concrete piers, with only the synthetic panels expressed. This story has ribbon windows along the north façade that wrap halfway around the east and west façades. A one-story, rectangular, concrete addition is located on the east side. This addition has no windows and only a single pair of flush, metal doors with a concrete ramp leading up to the doors. The back of the building is steel framed and clad in corrugated metal. It has a metal, gabled roof and a ribbon of windows at the third story that wrap all the way around the building. Additional louvered openings are located along the east façade. Also located on the east façade is the connection to the wind tunnel. Two metal roll-up doors are located along the west façade with a ribbon of windows in between. An addition on the south side takes the form of a one-story metal shed. This building appears to be in good condition.

**\*P3b. Resource Attributes:** (list attributes and codes) HP 39 – Other

**\*P4. Resources Present:** ☒ Building ☐ Structure ☐ Object ☐ Site ☐ District ☐ Element of District ☐ Other

P5a. Photo



**P5b. Photo:** (view and date)  
View of north & east façades,  
(8/04/05)

**\*P6. Date Constructed/Age and Sources:** 1946

**\*P7. Owner and Address:**  
United States of America as  
represented by National Aeronautics  
and Space Administration (NASA)

**\*P8. Recorded by:**  
Page & Turnbull, Inc.  
724 Pine Street  
San Francisco, CA 94108

**\*P9. Date Recorded:** 08/04/05

**\*P10. Survey Type:**  
Reconnaissance

**\*P11. Report Citation:** Architectural  
Resources Group, *Building Evaluations*,  
NASA Ames Research Center, Moffett  
Field, California (July 27, 2001)

**\*Attachments:** ☒ None ☐ Location Map ☐ Sketch Map ☐ Continuation Sheet ☐ Building, Structure, and Object Record  
☐ Archaeological Record ☐ District Record ☐ Linear Feature Record ☐ Milling Station Record ☐ Rock Art Record  
☐ Artifact Record ☐ Photograph Record ☐ Other (list)

**BUILDING, STRUCTURE, AND OBJECT RECORD**

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\*NRHP Status Code \_\_\_\_\_

\*Resource Name or # N-206

B1. Historic name:

B2. Common name: 12-Fott Pressure Wind Tunnel

B3. Original Use:

B4. Present use:

**\*B5. Architectural Style:**

**\*B6. Construction History:** (Construction date, alterations, and date of alterations)

1946 – Date of Construction; 1988 – Exterior restoration; 1994 – Complete reconstruction

**\*B7. Moved?** ☒No ☐Yes ☐Unknown **Date:** \_\_\_\_\_ **Original Location:** \_\_\_\_\_

**\*B8. Related Features:**

Other historically significant features include the wind tunnel.

B9a. Architect: National Advisory Committee for Aeromautics (NACA) Engineers

b. Builder:

**\*B10. Significance: Theme** Post-War Science and Space Exploration

**Area** NASA Ames Research Center

**Period of Significance** 1940-1952 **Property Type** Wind Tunnel

**Applicable Criteria** 1

(Discuss importance in terms of historical or architectural context as defined by theme, period, and geographic scope. Also address integrity)

As stated in the previous DPR 523 Form B for Building N-206:

*Building N-206 is an active wind tunnel facility and has operated as such since its original construction. Originally built as a pressurized wind tunnel in 1948, Building N-206 was restored in 1988 and completely reconstructed in 1994. During the building's reconstruction, the flow circuit was re-clad, thereby losing the original historic appearance and materials, but retaining its original three-story configuration, massing, and infrastructure. The interior has largely been rebuilt and retains little historic integrity. N-206 is unique as the first pressurized wind tunnel. The wind tunnel was capable of being pressurized to 88 P.S.I.A., which provided the capability for a high Reynolds Number and low turbulence aerodynamic testing. In 1967 it was identified in a nationwide review of American wind tunnels as being a key national resource, one of three to be so designated at Ames. N-206 utilized pressurized air for achieving extended test capabilities as represented by the parameter 'Reynolds Number.' While the building's location, setting and association remain intact, the 1994 reconstruction has completely altered the interior and exterior obscuring its original design, materials, workmanship and feeling. N-206 has lost its original integrity.*

For additional technical data, see Continuation Sheet.

B11. Additional Resource Attributes: (List attributes and codes) (HP39) – Wind Tunnel

**\*B12. References:**

- Architectural Resources Group, *Building Evaluations, NASA Ames Research Center, Moffett Field, California*, July 27, 2001  
- National Aeronautics and Space Administration, *Technical Facilities Catalog*, Volume 1, publication NHB 8800.5A (1), October 1974.

- Technical Information Division, Ames Research Center, *Ames Research Facilities Summary*, 1974.

- Donald D. Baals and William R. Corliss, *Wind Tunnels of NASA*, NASA SP-440, 1981.

B13. Remarks:

**\*B14. Evaluator:** Rich Sucre

Page & Turnbull, Inc.

724 Pine Street

San Francisco, CA 94108

**\*Date of Evaluation:** 10/18/2005

(This space reserved for official comments.)

Sketch Map

# CONTINUATION SHEET

Primary # \_\_\_\_\_

HRI # \_\_\_\_\_

Trinomial \_\_\_\_\_

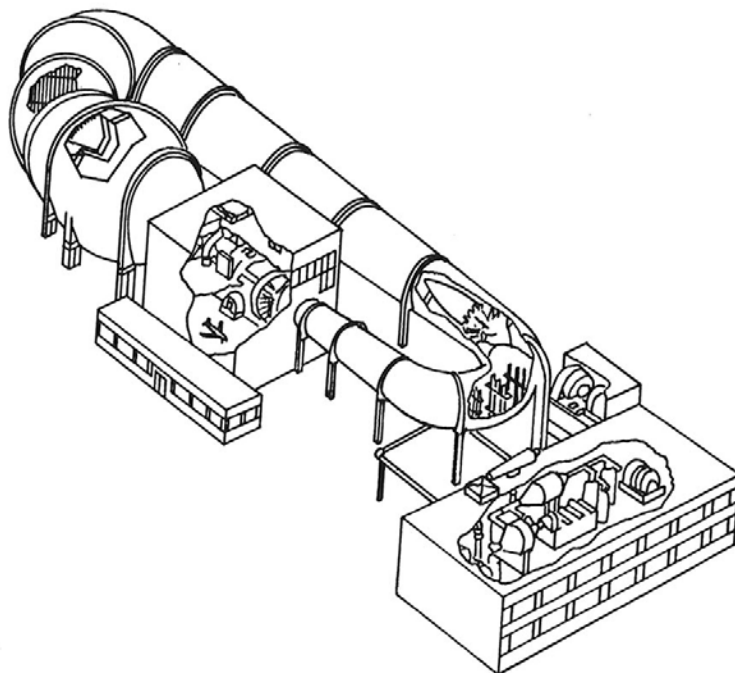
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Resource Name or # N-206

\*Recorded by Rich Sucre, Page & Turnbull

\*Date \_\_\_\_\_

☒ Continuation ☐ Update



## DESCRIPTION

The 12-ft pressure wind tunnel is a variable-density, low-turbulence tunnel that operates at subsonic speeds up to slightly less than Mach ~~1.0~~ <sup>0.6</sup>. The wind tunnel is powered by a ~~2-stage~~ <sup>0.6</sup> axial-flow fan driven by electric motors totaling ~~12,000~~ <sup>15,000</sup> hp. Airspeed in the test section is controlled by variation of the rotational speed of the fan. Eight fine-mesh screens in the settling chamber, together with the large contraction ratio of 25 to 1, provide an airstream of exceptionally low turbulence.

## TUNNEL DRIVE MOTOR

## CHARACTERISTICS

Mach Number:

0 to ~~0.90~~ <sup>0.60</sup>, continuously variable

Reynolds Number, per ft:

~~0.15~~ <sup>0.12</sup> 0 to ~~9.0~~ <sup>9.0</sup> x 10<sup>6</sup>

Stagnation Pressure, atm:

0.17 to ~~5.0~~ <sup>6.0</sup>

Stagnation Temperature:

500° to 625°R; generally above 560°R, depending on power being used

Test-Section Height, ft:

~~11.3~~ <sup>12.0</sup>

Test-Section Width, ft:

~~11.3~~ <sup>12.0</sup>

Test-Section Length, ft:

~~18.0~~ <sup>28.5</sup>

Test-Section Access Hatch, ft:

5.0 wide x 11.0 long, on top of tunnel

There are no facilities for schlieren or shadowgraph flow visualization, but motion pictures of models can be taken by remotely-operated cameras mounted in the balance chamber.

*THIS TUNNEL CAN OPERATE AT UP TO 6 ATMOSPHERES OF PRESSURE*